

► BUILDING CAPACITY



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Building Capacity by Staffing for Data Operations

Editor's Note: A need exists within environmental health agencies to increase their capacity to perform in an environment of diminishing resources. With limited resources and increasing demands, we need to seek new approaches to the business of environmental health.

Acutely aware of these challenges, NEHA has initiated a partnership with Accela called *Building Capacity*. *Building Capacity* is a joint effort to educate, reinforce, and build upon successes within the profession, using technology to improve efficiency and extend the impact of environmental health agencies.

The *Journal* is pleased to publish this bimonthly column from Accela that will provide readers with insight into the *Building Capacity* initiative, as well as be a conduit for fostering the capacity building of environmental health agencies across the country.

The conclusions of this column are those of the author(s) and do not necessarily represent the views of NEHA.

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Technology Plans

A technology plan is a multiyear strategic planning document conceived to assess gaps and goals that lays down a framework for data infrastructure, technology changes, upgrades, software, and staffing. It presses the question, "Where will we be in 5 years and how do we get there?"

We often work with larger local health departments on technology plans. It's a welcome invitation to align the software product's roadmap (the prioritized list and timing of future enhancements) with the health department's goals. For example, when the health department aspires to deploy a new and inventive mobile app to its inspectors, operators, or

residents, then the underlying plans must shift to support that particular initiative.

While it's routine to set timelines and budgets for updated tablet computers, servers, and storage, the following question can be a head-scratcher: "Once a technology plan is deployed, how many people will I need to support it?"

Data Operations

In this column I use the phrase "data operations" to refer to the nonpolicy, nonhealth, and noninspection activities that are essential to local health departments of a certain size. Examples of data operations include help desk, computer training, information technology (IT) department and vendor coordi-

nation, configuration changes, security, and report writing.

I also qualify health departments of a certain size because most health department workforces are small, where everybody does a bit of everything. This column applies to the largest health departments, those that serve a population of $\geq 250,000$ and have a workforce of ≥ 100 employees. At this scale, optimizing data operations (computer systems and support) has an amplifying effect. What follows is a model for ideal data operations staffing of a local health department.

Functions of Local Health Department Data Operations

This model proposes several high-level functions (Figure 1). Obviously, a single staff member might fill multiple roles, as well as have other unrelated duties. The model is really a portfolio of contributors, with individuals flexing their involvement with the current needs of the health department.

These functions include:

- **Power user/lead:** Power users are typically embedded, contributing to day-to-day transactions. Yet, due to their special skills and leadership, they often emerge as first-line resources to their colleagues.
- **Help desk:** The help desk takes routine questions to keep workers productive throughout the day. Lost passwords and quick directions do not require full administrative training.
- **System administrator:** System administrators can be responsible for creating new user accounts, setting security privileges, adding or changing configuration settings, and working with IT departments and vendors to maintain uninterrupted operations.

TABLE 1

Local Health Department Data Operations Staffing Model for Different Population Sizes

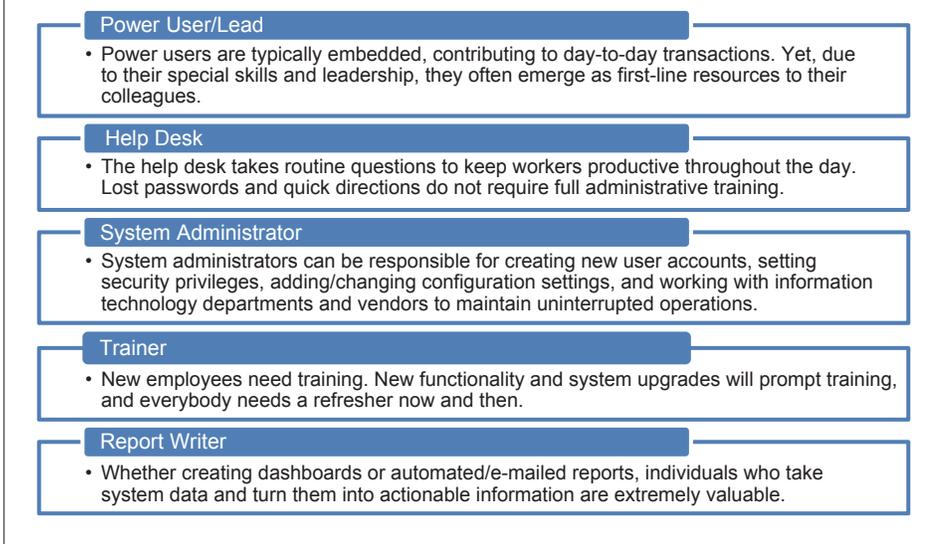
Population Served	Estimated Full-Time Employees*	Power User	Help Desk	System Administrator**	Trainer	Report Writer
250,000–499,000	124	2.0	1.0	1.0	0.5	0.5
500,000–999,999	230	5.0	2.0	1.5	1.0	1.0
>1,000,000	>486	10.0	3.0	2.0	2.0	1.5

*Source: 2016 National Profile of Local Health Departments, National Association of County and City Health Officials (http://nacchoprofilestudy.org/wp-content/uploads/2017/10/ProfileReport_Aug2017_final.pdf).

**Position requires cross-training and a succession plan.

FIGURE 1

Job Function Model of Local Health Department Data Operations



- Trainer: New employees need training. New functionality and system upgrades will prompt training, and everybody needs a refresher now and then.
- Report writer: Whether creating dashboards or automated/e-mailed reports, individuals who take system data and turn them into actionable information are extremely valuable.

2016 National Profile of Local Health Departments

I want to draw your attention to the National Association of County and City Health Officials' (NACCHO) 2016 National Profile of Local Health Departments (http://nacchoprofilestudy.org/wp-content/uploads/2017/10/ProfileReport_Aug2017_final.pdf).

This scholarly resource reflects survey responses from 2,533 local health departments and includes a chapter that solely addresses workforce numbers, changes, and occupations.

In the NACCHO survey, we find instances of dedicated "information systems specialists" at local health departments serving populations ≥250,000. At the largest segment (serving populations >1,000,000), we see 3.5 full-time equivalent positions dedicated to information systems.

Small health departments, one might conclude, advance data management goals without a named or dedicated resource. Instead, these health departments advance data man-

agement goals through individual contributions of other staff and leaders. In other instances, small health departments might rely more heavily on their software vendors.

A Model for Staffing Data Operations

As with all staffing challenges, the individual's aptitude, toolset, leadership, and processes weigh heavily on the ratios. Furthermore, the complexity of the local health department's systems and its initiatives that leverage technology must also be factored.

Table 1 reflects a commercial off-the-shelf (COTS) solution in a software as a service (SaaS) configuration. On premises and custom solutions might require an upward adjustment or additional roles (e.g., a programmer to fix bugs in a custom solution).

Conclusions and Next Steps

Local health departments are resilient and staffing models are just a starting point. We see how individual leaders rise and respond, flex and accommodate.

From the above, we should expect a healthy infrastructure for routine support, as well as a margin for aspirational projects that will advance department goals.

Continue the conversation in the Building Capacity in Environmental Health Group on LinkedIn (www.linkedin.com/groups/6945520).

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